

7446 8th Street Parcel Map

Arborist Report

APN: 207-0011-001-0000 and 207-0011-003-0000
Address: 7446 8th Street, Rio Linda
Control Number: PLNP2021-00129

September 2021 | 05047.00002.001

Prepared for:

Mr. Jerry Huffhines
7446 8th Street
Rio Linda, CA 95673

Prepared by:

HELIX Environmental Planning, Inc.
Stephanie McLaughlin
ISA Certification Number: WE-12922A
11 Natoma Street, Suite 155
Folsom, CA 95630

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Statement of Qualifications

Ms. McLaughlin is an ISA Certified Arborist (#WE-12922A). She received a Bachelor of Science with a major in Natural Resources and Environmental Sciences from the University of Illinois – Urbana/Champaign in 2011 and a Master of Science degree in Environmental Protection and Management from the University of Edinburgh in 2014. Ms. McLaughlin has over 9 years' experience in plant ecology and dendrology – including tree biology and identification – in California, Illinois and the United Kingdom and has worked as a consulting biologist in California since 2015. Ms. McLaughlin has conducted arboricultural surveys throughout California and has been based in Sacramento County since 2018.

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1.0 INTRODUCTION

On behalf of Mr. Jerry Huffhines (Property Owner), HELIX Environmental Planning, Inc. (HELIX) conducted an arborist survey for the proposed 7446 8th Street Parcel Map Project (Project). An application for a parcel split has been submitted to the Sacramento County Office of Planning and Environmental Review (Control #PLNP2021-00129) and the County requested an arborist report be prepared for the Project. This letter report documents the results of the arborist survey and provides general preservation and avoidance guidance for trees that may be preserved onsite during and after construction.

1.1 PROJECT LOCATION

The Project site, hereafter referred to as the Study Area, is comprised of two Assessor's Parcel Numbers [(APN) 207-0011-001-0000 (4.27 acres) and 207-0011-003-0000 (2.4 acres)] and is located at 7446, 7510, and 7532 8th Street in the community of Rio Linda, Sacramento County, California (Appendix A, Figure 1). The approximate center of the Study Area is at latitude 38.704160 and longitude -121.446379, NAD 83, and is located at an elevation of approximately 55 feet above mean sea level (amsl).

1.2 REGULATORY BACKGROUND

Sacramento County has adopted measures for the preservation of native and non-native trees through the County Code and the General Plan.

Chapter 19.04 of the County Code regulates removal and impacts to public trees, heritage trees, and landmark trees. Public trees are defined as any tree or shrub planted or maintained by the County on an easement, planting easement, street, County park, or public premises; heritage trees are any California oak tree with a trunk sixty inches or greater in girth, which equates to a trunk diameter of approximately 19 inches; landmark trees include any especially prominent or stately tree. A tree permit is required to prune, remove, or otherwise disrupt any public tree.

Chapter 19.12 of the County Code, titled "Tree Preservation and Protection", provides protection for native oak trees in the designated urban area of the unincorporated county. Native oaks are defined as valley oak (*Quercus lobata*), interior live oak (*Q. wislizeni*), blue oak (*Q. douglasii*), and oracle oak (*Q. x morehus*) trees having a diameter at breast height (DBH) of at least 6 inches for a single stem tree or a combined DBH of 10 inches for a tree with multiple stems. Grading, trenching, or filling within the dripline, or removal, destruction, or killing of a tree as defined in the ordinance is prohibited without a tree permit. Tree permits are issued by the Director of Public Works or by the body approving a discretionary action such as a conditional use permit. Section 19.12.150 provides authority to approving bodies to adopt mitigation measures as conditions of approval for discretionary projects in order to protect other species of trees in addition to native oaks. The Tree Preservation Ordinance does not specify replacement obligations for native oaks removed under a tree permit; the approving body may impose "reasonable conditions of approval as are necessary to minimize the environmental, health, or safety effects of the development or use" and may require financial security to ensure completion of "additional work" specified in the conditions of approval. "Additional work" may include replanting.

The Conservation Element of the General Plan includes a section regarding landmark and heritage tree protection. The stated objective of the plan is that "heritage and landmark tree resources [are]

preserved and protected for their historic, economic, and environmental functions.” The plan states that:

“Conservation of native tree species other than oaks and preservation of native oaks and landmark trees is the primary intent of the policies in the section. However, if preservation cannot be attained, then loss of the protected trees shall be compensated. Compensation for tree loss may be achieved by on-site or off-site replacement or payment into a Tree Preservation Fund.”

The section discusses thresholds of significance under CEQA for impacts to trees and concludes that tree impacts are “circumstantial”. The section states that projects that exceed the threshold of significance may have significant impacts even after mitigation, and conversely, tree loss of some species that exceeds the threshold in certain circumstances may not constitute a significant impact. The section states that final determination of significance will be made by the Environmental Coordinator. The section does not include a definition of “tree” based on DBH.

Policy CO-139 of the General Plan states that “Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.” Tree replacement values are stipulated as follows:

- one D-pot seedling = 1-inch DBH
- one 15-gallon tree = 1-inch DBH
- one 24-inch box tree = 2-inches DBH
- one 36-inch box tree = 3-inches DBH

The Sacramento County General Plan contains policies aimed at preserving tree canopy in the County. The Conservation Element of the General Plan includes a section on urban forest management. The stated objective of the plan is a “coordinated and funded Urban Tree Management Plan and program sufficient to achieve a doubling of the County’s tree canopy by 2050...”

Policy CO-146 of the General Plan states that “If new tree canopy cannot be created onsite to mitigate for the non-native tree canopy removed for new development, project proponents (including public agencies) shall contribute to the Greenprint funding in an amount proportional to the tree canopy of the specific project.”

Additionally, the County considers selected native trees that are 4 inches or diameter or larger at breast height and large, healthy non-native trees in their CEQA review process.

1.3 PROJECT DESCRIPTION

The proposed project is a parcel map application to subdivide the two parcels into four parcels. As the proposed project is a parcel map application with no associated construction, there are currently no plans to remove trees.

2.0 METHODS

2.1 TREE INVENTORY

The tree inventory was conducted on August 23, 2021, by HELIX Biologist and International Society of Arboriculture (ISA) Certified Arborist Stephanie McLaughlin, M.S. (ISA Certification #WE-12922A). In accordance with the County's arborist report submittal requirements, the tree inventory included all trees that are rooted in or overhanging the project site or that may be affected by off-site project-related construction and having a DBH of 4-inches or larger for single-stem trees or 10 inches or larger for multi-stem native oak and Northern California black walnut. All trees that are rooted in or overhanging the project site were mapped using an EOS Mapping Systems Arrow 100 GNSS receiver with sub-meter accuracy paired to a tablet/smart phone. Trees were identified in the field with permanent numbered metal tags. A map of trees inventoried for the project is provided in Figure 2 in Appendix A. Field data sheets are provided in Appendix B.

2.2 ASSESSMENT

Inventoried trees were assessed in the field for the parameters in the subsection below, including size, root protection zone, health, structure, dripline environment, overall condition and recommendation for protection or removal.

2.2.1 Size

Size is the measured diameter of the trunk at 54 inches above grade (referred to in this report as DBH), rounded to the nearest inch. For multi-stem trees, all stems at least 1-inch DBH were measured and summed. Measurements were made using either a Haglof 36-inch tree caliper or a U.S. Tape Company forester's diameter tape measure.

2.2.2 Root Protection Zone

Root protection zone is defined as a circle with a radius equal to the length of the longest limb measured from the trunk to the dripline.

2.2.3 Health

Health is an indication of the overall vigor and vitality of the tree expressed as a rating of Good, Fair, or Poor. Ratings for health were based on the criteria in Table 1.

Table 1
CRITERIA FOR RATING TREE HEALTH

Good	Little or no Evidence of Stress, Disease, Infestation, or Nutrient Deficiency. Foliage (if present on deciduous species) is of average or better density, size, and color for the species; foliage in the canopy is evenly distributed; twig elongation and bud density are normal for the species; there is no evidence of dieback; there is little or no epicormic growth (water sprouts); there are not excessive numbers of galls or excessive evidence of herbivory; callusing, if present, is vigorous; bark is healthy and intact; there are no signs of senescence.
Fair	Moderate Evidence of Stress, Disease, Infestation, or Nutrient Deficiency. Foliage is below average density, size, or color for the species; foliage density may be lower in some parts of the canopy; twig elongation and bud density may be moderately reduced; some evidence of dieback may be present; some epicormic growth may be present; gall or herbivore load is higher than average for the species; callusing of old wounds is not well-developed; there may be evidence of small areas of infection such as bark swelling or sloughing; the tree may be over-mature or beginning to senesce.
Poor	Abundant Evidence of Stress, Disease, Infestation, or Nutrient Deficiency. Foliage and/or buds are sparse; leaves are reduced in size or of unhealthy color; the canopy is sparse and underdeveloped; there is widespread evidence of dieback; twig elongation is severely reduced; there is abundant epicormic growth; gall load, insect exit holes, or evidence of herbivory is severe; old wounds are not callused; there is widespread evidence of bark swelling, splitting, or sloughing in the root crown, trunk, or major limbs; the tree is senescent.

2.2.4 Structure

Structure is an indication of the structural stability and failure potential of the tree expressed as a rating of Good, Fair, or Poor. Ratings for structure were based on the criteria in Table 2.

Table 2
CRITERIA FOR RATING TREE STRUCTURE

Good	Low Potential for Failure. No wounds, cavities, decay, or indications of hollowness evident in the root crown, trunk, or major limbs; no exposed anchor roots or circling roots; no codominant branching or multiple trunk attachments; no crossing limbs; little or no included bark at branch attachments; no dead major limbs; no major limb failures; no overburdened limbs; no excessive or unnatural lean; proper development of trunk taper; structure is more or less symmetrical.
Fair	Moderate Potential for Failure. Small to moderate wounds, cavities, decay, or indications of hollowness may be present in the root crown, trunk, or major limbs; minor exposure of anchor roots; no circling roots; codominant trunks or multiple trunk attachments are present but included bark is absent or not well-developed; no large crossing limbs are present; small or medium-sized dead limbs may be present in the canopy; no large limb failures; limbs may be slightly overburdened; natural or only minor lean is evident with well-developed reaction wood; canopy development may be slightly to moderately asymmetrical.
Poor	High Potential for Failure. Significant wounds, cavities, decay, or indications of hollowness evident in the root crown, trunk, or major limbs; anchor roots are exposed or the tree has lost anchorage; circling roots are present; codominant branching or multiple trunk attachments are present; large crossing limbs are present; significant amounts of included bark are present at trunk and branch attachments; large dead limbs are present in the canopy; evidence of past large limb failures; overburdened limbs; poor trunk taper; excessive or unnatural lean or drastically unbalanced canopy development.

2.2.5 Dripline Environment

Dripline environmental is a brief description of the growing condition of the area inside the dripline. Examples of growing conditions include vegetation, slope, existing impermeable surfaces or structures, utility lines, drainage, previous cuts or fills, fire damage, etc.

2.2.6 Overall Condition

Overall condition is a numerical rating of the tree based on the health and structural assessments, expressed as a scale of 0 (dead), 1 (severe decline), 2 (declining), 3 (fair), 4 (good), or 5 (excellent).

2.2.7 Recommendation for Preservation or Removal

The proposed project is a parcel map application with no associated construction proposed at the time of report preparation, thus recommendations for preservation or removal are based solely on tree condition and not potential future impacts. A total of three trees are recommended for removal based on condition including one Fremont cottonwood (tree #276) and two honey locust (trees #308 and #311). All three of these trees are in poor health and were given a condition rating of 1 (severe decline).

3.0 RESULTS

3.1 GENERAL SITE CONDITIONS

The site contains three residences and associated outbuildings and landscaping along 8th Street and open fields in the rear of each property. Historically, the site has changed little since the last house was developed as of 1966 as evidenced by historical aerial imagery dating back to 1947 (NETR Online 2021). The house in the northwestern corner of the Study Area has been on site prior to 1947 (NETR Online 2021).

The Study Area is located in a rural residential area of northern Sacramento County, which is developing rapidly overall with suburban residential, commercial, and light industrial uses. Land uses surrounding the Study Area are rural residential single-family residences, newly developed single-family residences, light industrial, and agriculture, such as livestock grazing. Terrain in the immediate vicinity of the Study Area is generally flat. The elevation on the site is approximately 55 feet amsl.

3.2 TREE INVENTORY

A total of 36 trees were surveyed within or overhanging the Study Area during the arborist survey, consisting of three valley oaks (*Quercus lobata*), one Fremont cottonwood (*Populus fremontii*), one Arizona cypress (*Cupressus arizonica*), two catalpa (*Catalpa speciosa*), one chinaberry tree (*Melia azedarach*), one mulberry (*Morus alba*), one crabapple (*Malus* spp.), one crepe myrtle (*Lagerstroemia speciosa*), two desert ash (*Fraxinus angustifolia*), eight honey locust (*Gleditsia triacanthos*), five Mexican fan palms (*Washingtonia robusta*), one Oregon ash (*Fraxinus latifolia*), one queen palm (*Syagrus romanzoffiana*), and seven coastal redwoods (*Sequoia sempervirens*). Three of the 36 inventoried trees (trees #275, #277, and #278) were considered regulated by Sacramento County. In addition to being a protected tree, tree #277 is classified as a heritage tree as it has a DBH of 19 inches.

The trees were generally in excellent to good condition. Each tree was given a numerical rating of condition based on the health and structural assessments, on a scale of 0 (dead), 1 (severe decline), 2 (declining), 3 (fair), 4 (good), or 5 (excellent). Ten trees were given a rating of 5, thirteen trees were given a rating of 4, nine trees were given a rating of 3, one tree was given a rating of 2, and three trees were given a rating of 1. The three trees (trees #276, #308, and #311) given a rating of 1 were recommended for removal, due to structural and health issues that cannot be corrected. The three trees have trunk wounds, extensive trunk rot, and are exhibiting crown dieback. None of the trees recommended for removal are protected by Sacramento County. Many of the trees rated 2 and 3 appear to be suffering from water stress as a result of drought conditions. More frequent watering of these trees is recommended to improve their condition.

As the proposed project is just the subdivision of the two parcels into four lots, there are currently no plans to remove trees. If plans are developed in the future that could impact trees, a separate analysis of tree impacts would need to be conducted and impacts to protected trees would require a permit from the Sacramento County Director of Public Works. If any trees are preserved onsite, then the appropriate tree preservation and protection measures should be implemented.

Detailed tree data is provided in Appendix B. Representative photographs of the Site are provided in Appendix C. Tree Protection Recommendations are provided in Appendix D.

4.0 SUMMARY/CONCLUSION

A total of 36 trees are present within or overhanging the Study Area. Of these trees, three are native oak trees protected by Sacramento County and 33 are non-native trees that are not currently regulated but may require mitigation for loss of tree canopy per the County General Plan. If proposed, removal of protected trees to facilitate development of the project would require a permit from the Sacramento County Director of Public Works. As the proposed project is a parcel map application with no associated construction, there are currently no plans to remove trees.

5.0 REFERENCES

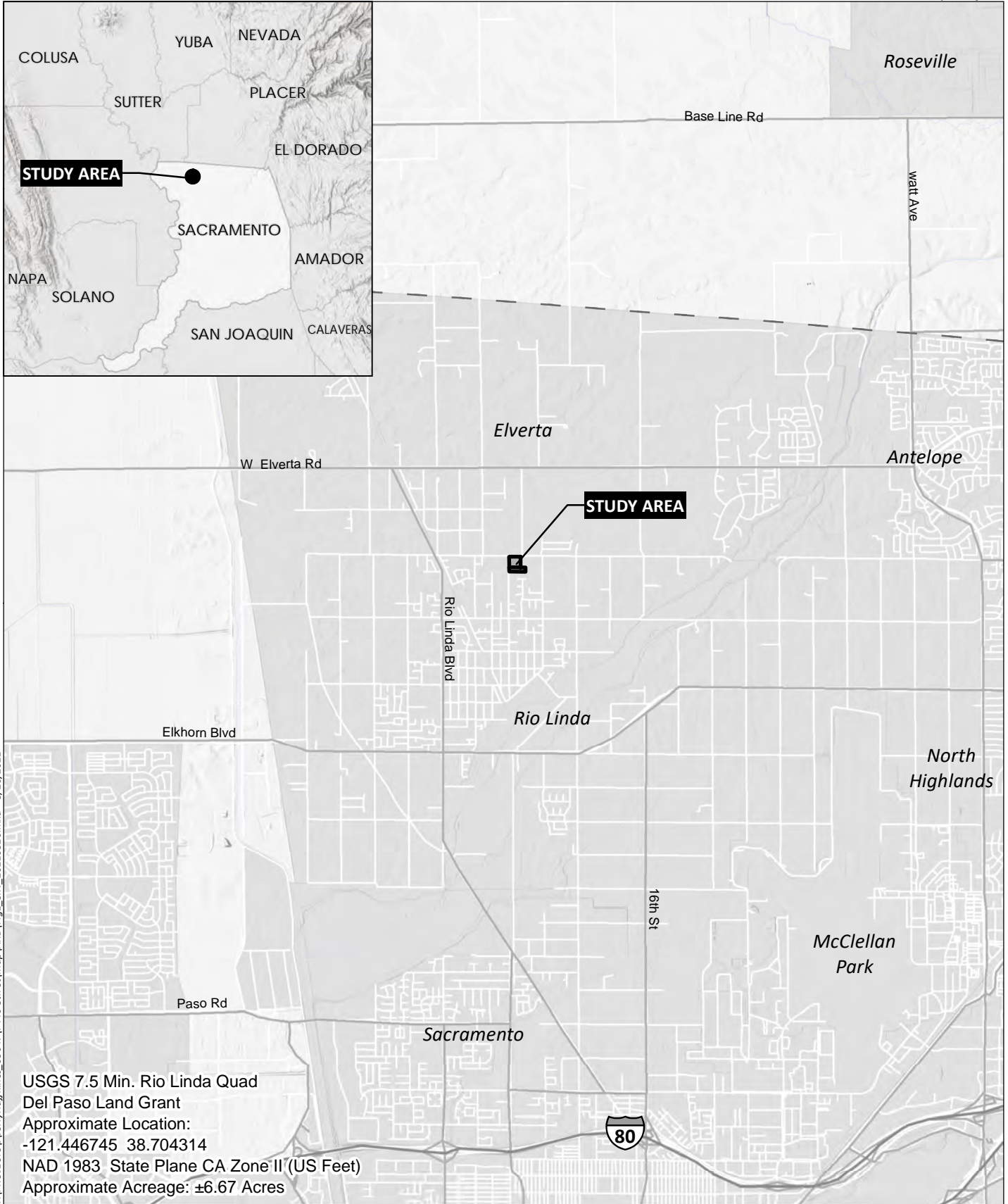
NETR Online. 2021. Historical Aerials. Accessed online August 23 2021 at:
<https://www.historicaerials.com/>.

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Appendix A

Figures

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Legend

- Protected Tree
- Non-Protected Tree
- ✕ Tree Recommended for Removal
- Tree Dripline
- Parcels



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 County Control Number: PLNP2021-00129

Source: Sacramento County, 3/26/2018



Appendix B

Tree Data

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Appendix B Tree Data

Tree Number	Species	DBH (in)	Root Protection Zone (ft)	Height (ft)	Health	Structure	Condition	Dripline Environment	Notes	Protected?
275	<i>Quercus lobata</i> valley oak	16	9	35	G	G	5	grass	minor amounts of galls	Yes
276	<i>Populus fremontii</i> Fremont cottonwood	11, 9.5, 10.2	17	25	P	P	1	grass	crown dieback, trunk wound, trunk rot, co-dominant leaders, recommend for removal	No
277	<i>Quercus lobata</i> valley oak	19	16	45	G	G	5	grass	Minor pruning cuts; Heritage Tree	Yes
278	<i>Quercus lobata</i> valley oak	9	4	20	G	GF	4	grass, drainage	co-dominant leaders, included bark, right on edge of drainage	Yes
279	<i>Morus alba</i> mulberry	30, 18	17	45	GF	GF	4	turf grass	trunk wound, pruning cuts, swing in tree	No
280	<i>Sequoia sempervirens</i> coastal redwood	9	4	30	G	G	5	turf grass	near irrigation system	No
281	<i>Sequoia sempervirens</i> coastal redwood	9	4	35	GF	G	4	turf grass	minor crown dieback	No
282	<i>Melia azedarach</i> chinaberry tree	22	19	45	GF	F	3	turf grass	pruning cut, trunk wound, fig is growing out of wound	No
283	<i>Sequoia sempervirens</i> coastal redwood	8	3	25	F	G	3	turf grass	crown dieback	No
284	<i>Sequoia sempervirens</i> coastal redwood	10	5	35	GF	G	4	turf grass	minor crown dieback	No
285	<i>Sequoia sempervirens</i> coastal redwood	6	3	15	GF	G	4	turf grass	minor crown dieback	No

Appendix B Tree Data

Tree Number	Species	DBH (in)	Root Protection Zone (ft)	Height (ft)	Health	Structure	Condition	Dripline Environment	Notes	Protected?
286	<i>Sequoia sempervirens</i> coastal redwood	8	3	30	G	G	5	turf grass		No
287	<i>Sequoia sempervirens</i> coastal redwood	10	4	35	G	G	5	turf grass		No
288	<i>Fraxinus latifolia</i> Oregon ash	10	11	45	F	G	3	gravel	ash leaf curl aphid infestation, included bark	No
289	<i>Malus</i> spp. crabapple	4, 3.6, 2.5	5	12	G	GF	4	gravel	pruning cuts, gravel planter	No
290	<i>Syagrus romanzoffiana</i> queen palm	10	7	22	G	GF	4	gravel	lean	No
291	<i>Washingtonia robusta</i> Mexican fan palm	11	2	20	G	G	5	gravel		No
292	<i>Washingtonia robusta</i> Mexican fan palm	8	2	12	G	G	5	gravel		No
294	<i>Washingtonia robusta</i> Mexican fan palm	7	2	10	G	G	5	gravel		No
295	<i>Fraxinus angustifolia</i> desert ash	15	17	40	GF	G	4	turf grass	minor crown dieback	No
300	<i>Fraxinus angustifolia</i> desert ash	7	7	17	GF	F	3	turf grass	trunk wound, lean, included bark	No
301	<i>Lagerstroemia speciosa</i> crepe myrtle	5	3	9	G	G	5	gravel	epicormics at base	No

Appendix B Tree Data

Tree Number	Species	DBH (in)	Root Protection Zone (ft)	Height (ft)	Health	Structure	Condition	Dripline Environment	Notes	Protected?
302	<i>Washingtonia robusta</i> Mexican fan palm	17	4	20	GF	G	4	turf grass	exposed roots	No
303	<i>Washingtonia robusta</i> Mexican fan palm	12	3	7	GF	G	4	turf grass	exposed roots	No
304	<i>Lagerstroemia speciosa</i> crepe myrtle	3, 2.9, 4.5, 3.2, 4.1, 3.9, 3.6	7	11	G	F	4	turf grass	co-dominant leaders	No
305	<i>Gleditsia triacanthos</i> honey locust	13, 22	17	45	G	GF	4	turf grass	included bark, pruning cuts	No
306	<i>Gleditsia triacanthos</i> honey locust	32	20	50	GF	GF	4	turf grass	included bark	No
307	<i>Gleditsia triacanthos</i> honey locust	19	15	40	F	F	3	turf grass	lean, trunk wound, trunk rot	No
308	<i>Gleditsia triacanthos</i> honey locust	16	9	35	P	P	1	turf grass	crown dieback, trunk wound, trunk rot, recommend for removal	No
309	<i>Gleditsia triacanthos</i> honey locust	18	15	30	F	GF	3	turf grass	pruning cuts, scarce crown	No
310	<i>Gleditsia triacanthos</i> honey locust	13	10	25	F	F	3	turf grass	pruning cuts, trunk wound, scarce crown	No
311	<i>Gleditsia triacanthos</i> honey locust	18	15	30	P	FP	1	turf grass	trunk wound, trunk rot, scarce crown, recommend for removal	No

Appendix B Tree Data

Tree Number	Species	DBH (in)	Root Protection Zone (ft)	Height (ft)	Health	Structure	Condition	Dripline Environment	Notes	Protected?
312	<i>Gleditsia triacanthos</i> honey locust	11, 10.7	17	30	FP	F	3	turf grass	co-dominant leaders, included bark, scarce crown	No
313	<i>Cupressus arizonica</i> Arizona cypress	18, 7, 19.6, 29.8	17	65	FP	FP	2	turf grass	trunk wound, trunk rot, dead branch, co-dominant leaders, exposed roots, power lines, cabled	No
314	<i>Catalpa speciosa</i> Catalpa	25	25	60	G	G	5	turf grass	exposed roots	No
315	<i>Catalpa speciosa</i> Catalpa	12, 15.3	15	50	FP	F	3	turf grass	co-dominant leaders, trunk wound, trunk rot	No
TOTAL NUMBER/PROTECTED:										36/3

Appendix C

Site Photos

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Photo 1. View of cottonwood and valley oak trees located in the non-native grassland on APN 207-0011-001-0000.



Photo 2. View of various ornamental trees in the front of the residence on APN 207-0011-001-0000.



Photo 3. View of coastal redwoods and a chinaberry tree located south of the residence on APN 207-0011-001-0000.



Photo 4. View of two Mexican fan palms (Tree #303 and #302) located next to a swimming pool behind the southern residence on APN 207-0011-001-0000.



Photo 5. View of a line of honey locust trees located adjacent to a driveway on APN 207-0011-001-0000.



Photo 6. View of a large trunk wound and trunk rot in a honey locust (Tree #308) on APN 207-0011-001-0000.



Photo 7. View of a basal trunk wound and rot in an Arizona cypress (Tree #313) on APN 207-0011-001-0000.



Photo 8. View of two catalpa trees (Tree #314 and #315) located next to the northern residence on APN 207-0011-001-0000.

Appendix D

Tree Protection Recommendations

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Appendix D

Tree Protection Recommendations

Tree protection recommendations are provided below to minimize the potential for injury or damage to occur to avoided trees if construction is proposed at the project site. These recommendations should be integrated into the construction documents, as applicable to the project.

1. *Trenching procedure.* Trenching within the protected zone of a protected tree, when permitted, may only be conducted with hand tools or compressed air, or as otherwise directed by an arborist, in order to avoid root injury.
 - a. When a trenching machine is being used adjacent to the dripline of protected trees, and roots are encountered smaller than two inches, the wall of the trench adjacent to the trees shall be hand-pruned, making clear, clean cuts through the roots. All damaged, torn, and cut roots shall be given a clean cut to remove ragged edges, which promote decay. Trenches shall be filled within 24 hours; where this is not possible, the side of the trench adjacent to the trees shall be kept shaded with four layers of dampened, untreated burlap, wetted as frequently as necessary to keep the burlap wet. Roots two inches or larger, when encountered, shall be reported immediately to the Project Arborist, who will decide whether the Contractor may cut the root as mentioned above or shall excavate by hand or with compressed air under the root. All exposed roots are to be protected with dampened burlap.
 - b. Where possible, route pipes outside of the dripline of a protected tree to avoid conflict with roots.
 - c. Where it is not possible to reroute pipes or trenches, the contractor shall bore or tunnel beneath the dripline of the tree. The boring shall take place not less than three feet below the surface of the soil in order to avoid encountering "feeder" roots. All boring equipment must be staged outside of the dripline of protected trees.
2. *Root, trunk, and crown protection.*
 - a. No vehicles, construction or otherwise, and no materials, construction or otherwise, shall be placed for any period of time within the protected zone other than those described in this section.
 - b. Staging areas for equipment shall be established far enough from existing trees to ensure adequate protection of the root zone.
 - c. Entry and exit routes shall be established and fenced off with chain link or construction fencing. When planning routes, avoid utility access corridors.
 - d. A six-inch layer of coarse mulch or wood chips is to be installed within the Tree Protection Zone of protected trees. Mulch shall be kept 12 inches away from the trunk.
 - e. When determined necessary by an arborist, trunks of trees shall be protected with a single wrap of Geocomposite. Geocomposite shall be double sided, Geonet core with non-woven covering (such as Tenax Tendrain 770/2), or equivalent.

Appendix D

Tree Protection Recommendations

- f. Trees that have been identified in the site inventory as posing a health or safety risk may be removed or pruned by no more than one-third, subject to approval of the required permit by the Planning Division. Pruning of existing limbs and roots shall only occur under the direction of the Project Arborist.
3. *Cutting roots.*
 - a. Minor roots less than one inch in diameter may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area.
 - b. Major roots over one inch in diameter may not be cut without approval of an Arborist. Depending upon the type of improvement being proposed, bridging techniques or a new site design may need to be employed to protect the root and the tree.
4. *Protective fencing.*
 - a. Type of fencing. A minimum five-foot high chain link or substitute fence approved by the Director shall be installed at the outermost edge of the protected zone of each protected tree or groups of protected trees. Exceptions to this policy may occur in cases where protected trees are located on slopes that will not be graded. However, approval must be obtained from the Department to omit fences in any area of the project.
 - b. Fence installation. The fences shall be installed in accordance with the approved fencing plan prior to the commencement of any grading operations or such other time as determined by the review body. The developer shall call the Department for an inspection of the fencing prior to grading operations.
 - c. Signing. Signs shall be installed on the fence in four equidistant locations around each individual protected tree. The size of each sign must be a minimum of two feet by two feet and must contain the following language: "WARNING, THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE CITRUS HEIGHTS COMMUNITY DEVELOPMENT DEPARTMENT." Signs placed on fencing around a grove of protected trees shall be placed at approximately 50-foot intervals.
 - d. Fence removal. Once approval has been obtained, the fences shall remain in place throughout the entire construction period and shall not be removed without obtaining written authorization from the Department.
5. *Grading.*
 - a. Every effort should be made to avoid cut and/or fill slopes within or in the vicinity of the protected zone of any protected tree.
 - b. No grade changes are permitted which cause water to drain to within twice the longest radius of the protected zone of any protected tree.
 - c. No grade changes are permitted that will lower the ground on all sides of the tree.

Appendix D

Tree Protection Recommendations

- d. All grade changes within the dripline of a protected tree shall be supervised by the Project Arborist. Cuts or fills of soil within the dripline of a protected tree may have a retaining wall system installed as approved by the Project Arborist and City Staff.
6. *Certification letters.* Certification letters are required for all regulated activities within the protected zone of protected trees. The developer's Arborist will be required to submit a certification letter to the Department within five working days of completing any regulated activity, attesting that all work was conducted in accordance with the appropriate permits and the requirements of the TPO.
7. *Utility trenching pathway plan.* As a condition of the Tree Permit, the developer will be required to submit a utility trenching-pathway plan for approval following approval of the project improvement or civil plans.
8. *Impact avoidance measures.* The following practices shall be prohibited at all times unless specifically allowed in the Arborist Report or the Tree Permit Conditions of Approval:
 - a. Run off or spillage of potentially damaging materials into the area below any tree canopy.
 - b. Fires under and adjacent to trees.
 - c. Discharge of exhaust into foliage.
 - d. Securing of cable, chain, or rope to trees or shrubs.
 - e. Application of soil sterilizers under pavement within driplines of existing trees.

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